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CLAIMS

What is Claimed is:

1. A medical lead adaptor assembly for making an electrical connection between a cardiac lead and an external medical device, the cardiac lead including a lead connector pin for electrically coupling the cardiac lead to the lead adaptor assembly, the lead adaptor assembly comprising:
- 5 a connector end assembly electrically coupling the lead adaptor assembly to the external device;
- 10 a housing portion having a lead receptacle portion including a lead receptacle receiving the lead connector pin of the cardiac lead to electrically couple the cardiac lead to the lead adaptor assembly; and
- 15 a retaining flange extending from the housing portion and having a retaining slot receiving and retaining the cardiac lead to substantially prevent corruption of the electrical coupling of the cardiac lead to the lead adaptor assembly.
2. The medical lead adaptor assembly of claim 1, wherein the connector pin includes a shrouded portion, and wherein the lead receptacle includes an outer portion forming an opening and a connector ring centrally located within the opening to enable the lead receptacle to receive the shrouded portion of the connector pin between the connector ring and the outer portion.
- 20 3. The medical lead adaptor assembly of claim 1, wherein the retaining slot includes a slot opening, and wherein the retaining flange includes an upper portion spaced a distance from a lower tab portion to form the slot opening, the distance being less than a thickness of the cardiac lead.
- 25 4. The medical lead adaptor assembly of claim 1, wherein the housing portion includes a top portion and a bottom portion, the lead receptacle portion extending along a vertical plane between the top portion and the bottom portion, and wherein the retaining flange is positioned at an angle from the vertical plane to substantially prevent inadvertent removal of the lead connector pin from the lead receptacle.
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5. The lead adaptor assembly of claim 4, wherein the angle is approximately equal to 45 degrees.

6. The lead adaptor assembly of claim 4, wherein the retaining flange extends outward along the bottom portion of the lead adaptor assembly.

7. The lead adaptor assembly of claim 1, wherein the retaining flange reduces the effect on the connector pin of a force exerted on the cardiac lead in a direction away from the lead reception portion.

8. The lead adaptor assembly of claim 1, wherein the retaining flange transfers an outward force exerted on the cardiac lead to result in an inward force being exerted on the connector pin.

9. The lead adaptor assembly of claim 1, wherein the housing portion includes a recessed portion for use during handling of the lead adaptor assembly.

10. A medical lead adaptor assembly system, comprising:  
a lead adaptor assembly;  
a cardiac lead inserted within a patient and having a connector pin electrically coupling the cardiac lead and the lead adaptor assembly;  
an external medical device performing cardiac stimulation and monitoring of the patient through the lead adaptor assembly and the cardiac lead; and  
a retaining flange, positioned on the lead adaptor assembly, having a retaining slot receiving and retaining the cardiac lead to substantially prevent corruption of the electrical coupling of the cardiac lead and the lead adaptor assembly.

11. The medical lead adaptor assembly system of claim 10, wherein the lead adaptor assembly further comprises:  
a housing portion including a lead receptacle portion, the housing having a top portion and a bottom portion; and  
a lead receptacle, positioned on the lead receptacle portion, receiving the connector pin to electrically couple the cardiac lead with the lead adaptor assembly; wherein the retaining slot includes a slot opening, and wherein the retaining flange includes an upper portion spaced a

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distance from a lower tab portion to form the slot opening, the distance being less than a thickness of the cardiac lead.

12. The medical lead adaptor assembly of claim 11, wherein the connector pin includes a shrouded portion, and wherein the lead receptacle includes an outer portion forming an opening and a connector ring centrally located within the opening to enable the lead receptacle to receive the shrouded portion of the connector pin between the connector ring and the outer portion.

13. The medical lead adaptor assembly system of claim 11, wherein the lead receptacle portion extends along a vertical plane between the top portion and the bottom portion of the housing, and wherein the retaining flange is positioned at an angle from the vertical plane to substantially prevent inadvertent removal of the lead connector pin from the lead receptacle.

14. The lead adaptor assembly system of claim 13, wherein the angle is approximately equal to 45 degrees.

15. The lead adaptor assembly system of claim 13, wherein the retaining flange extends outward along the bottom portion of the lead adaptor assembly.

16. The lead adaptor assembly system of claim 11, wherein the retaining flange reduces the effect on the connector pin of a force exerted on the cardiac lead in a direction away from the lead reception portion.

17. The lead adaptor assembly system of claim 10, wherein the retaining flange transfers an outward force exerted on the cardiac lead to result in an inward force being exerted on the connector pin.

18. The lead adaptor assembly system of claim 11, wherein the housing portion includes a recessed portion for use during handling of the lead adaptor assembly.

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19. A medical lead adaptor assembly for making an electrical connection between a plurality of cardiac leads inserted within a patient and an external medical device, each of the plurality of cardiac leads including a lead connector pin for electrically coupling the plurality of cardiac leads to the lead adaptor assembly, the lead adaptor assembly comprising:

5 a housing having a top portion and a bottom portion;

a lead receptacle portion extending along a vertical plane extending between the top portion and the bottom portion;

an external device lead extending from the housing to a distal external connector end assembly electrically coupling the lead adaptor assembly to the external device;

10 a first lead receptacle, positioned on the lead receptacle portion, receiving a first connector pin of a first cardiac lead of the plurality of cardiac leads to electrically couple the first connector pin to the first lead receptacle to electrically couple the first cardiac lead to the external device through the lead adaptor assembly;

15 a second lead receptacle, positioned on the lead receptacle portion, receiving a second connector pin of a second cardiac lead of the plurality of cardiac leads to electrically couple the second connector pin to the second lead receptacle to electrically couple the second cardiac lead to the external device through the lead adaptor assembly;

20 a retaining flange extending from bottom portion of the housing and having a first retaining slot receiving and retaining the first cardiac lead and a second retaining slot receiving and retaining the second cardiac lead, wherein the retaining flange extends from the bottom portion at an angle from the vertical plane to substantially prevent corruption of the electrical coupling of the first cardiac lead to the first lead receptacle and the second cardiac lead to the second lead receptacle.

25 20. The lead adaptor assembly of claim 19, wherein the first retaining slot includes a first slot opening and the second retaining slot includes a second slot opening, and wherein the retaining flange includes a first upper portion spaced a first distance from a first lower tab portion to form the first slot and a second upper portion spaced a second distance from a second lower tab portion to form the second slot, the first distance being less than a thickness of the first cardiac lead and the second distance being less than a thickness of the second cardiac lead to fixedly  
30 retaining the first cardiac lead and the second cardiac lead within the first slot and the second slot, respectively.

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21. The lead adaptor assembly of claim 20, wherein the angle is approximately equal to 45 degrees.

22. The lead adaptor assembly of claim 21, wherein the retaining flange reduces the effect on the first connector pin and the second connector pin of a force exerted on the first cardiac lead and the second cardiac lead, respectively, in a direction away from the lead reception portion.

23. The lead adaptor assembly of claim 21, wherein the retaining flange transfers an outward force exerted on the first cardiac lead and on the second cardiac lead to result in an inward force being exerted on the first connector pin and on the second connector pin.

24. The lead adaptor assembly of claim 21, wherein the housing includes a recessed portion for use during handling of the lead adaptor assembly.

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